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Sodium reactions full:

- Combusts vigorously when heated with oxygen with a yellow-orange flame to form white Sodium Oxide solid
- Combusts vigorously when heated with chlorine to form sodium chloride with a bright orange flame
- Sodium has a very exothermic reaction with cold water producing hydrogen & colorless solution of sodium hydroxide
- Sodium oxide reacts with cold water exothermically to produce sodium hydroxide, with pH aroun14
- Sodium oxide reacts acids to produce salt and water
- Sodium hydroxide reacts with acids to give water and salts
- Sodium chloride dissolves in water to give a solution of pH 7

Magnesium reactions full:

- Combusts vigorously when heated with oxygen with a bright white flame to form white Magnesium Oxide solid
- Combusts vigorously when heated with chlorine to form magnesium chloride with a bright white flame
- Has a very slight reaction to cold water forming a think layer of Magnesium hydroxide and hydrogen gas
- Burns in steam with bright white flame to produce white magnesium oxide and hydrogen
- Magnesium oxide has no observations with water, but produces magnesium hydroxide which is insoluble and of pH 9
- Magnesium oxide reacts with acids to give salt and water
- Magnesium hydroxide reacts with acids to give water and salts
- Magnesium chloride dissolves in water to give solution of pH 6.5

Aluminum reactions full:

- Combusts when in powdered form fast when heated with oxygen with a bright white flame to form white Aluminum Oxide solid as there is usually a strong oxide layer on aluminum
- Combusts vigorously when heated with chlorine with a yellow flame forming a pale-yellow aluminum chloride gas
- aluminum oxide doesn't react with water
- aluminum oxide reacts with acids to give salt and water
- aluminum oxide reacts with aqueous sodium hydroxide alongside water to give tetrahydroxoaluminate
- aluminum oxide reacts with sodium hydroxide to give sodium aluminate
- Aluminum hydroxide reacts with acids to give water and salt
- Aluminum hydroxide reacts with NaOH to give tetrahydroxoaluminate
- Aluminum chloride reacts with water to give

Silicon reactions full:

- Combusts slowly when heated strongly in powdered form with oxygen with bright yellow sparkles to form white Silicon (IV) oxide
- Combusts vigorously when heated with chlorine to form silicon tetrachloride which is a colorless liquid
- Silicon dioxide doesn't react with water due to its strongly held macromolecular structure
- Silicon dioxide reacts with sodium hydroxide to give sodium silicate and water
- Silicon chloride reacts with water to form silicon dioxide and toxic colorless hydrogen chloride

Phosphorus reactions full:

- Combusts spontaneously in air with a yellow or white flame to form white clouds of phosphorus (IV) oxide
- Combusts spontaneously in chlorine to form phosphorus (V) chloride which is a yellow solid
- Phosphorus oxide reacts with water to give phosphoric acid with pH of 2
- Phosphorus oxide reacts with bases to give salt and water
- Phosphorus chloride reacts with water to give phosphoric acid and toxic hydrogen chloride

Sulfur reactions full:

- Combusts steadily when heated gently in powdered form with oxygen with blue flames to form toxic sulfur dioxide fumes
- Sulfur dioxide dissolves in water to give sulphurous acid with pH of 1
- Sulfur dioxide reacts with bases to salt and water
- If sulfur dioxide is bubbled through sodium hydroxide, sodium hydrogen sulfite solution is formed
- Sulfur trioxide reacts violently with water to produce a fog of Sulphur acid droplets that have a pH of 0
- Sulfuric acid reacts with bases to give salt and water

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$$Si + O_2 \longrightarrow SiO_2$$

$$P_4 + 10Cl_2 \longrightarrow 4PCl_5 \qquad 2Na + Cl_2 \longrightarrow 2NaCl$$

$$S + O_2 \longrightarrow SO_2$$

$$Mg + 2H_2O \longrightarrow Mg(OH)_2 + H_2$$

$$Mg + H_2O \longrightarrow MgO + H_2$$

$$4Al + 3O_2 \longrightarrow 2Al_2O_3 \qquad P_4 + 5O_2 \longrightarrow P_4O_{10}$$

$$SO_2 + 2NaOH \longrightarrow Na_2SO_3 + H_2O$$

$$2Al + 3Cl_2 \longrightarrow 2AlCl_3$$

$$Al_2O_3 + 2NaOH + 3H_2O \longrightarrow 2NaAl(OH)_4$$

$$MgO + H_2O \longrightarrow Mg(OH)_2$$

$$SiO_2 + 2NaOH \longrightarrow Na_2SiO_3 + H_2O \qquad Si + 2Cl_2 \longrightarrow SiCl_4$$

$$2Mg + O_2 \longrightarrow 2MgO$$

$$Al(OH)_3 + NaOH \longrightarrow NaAl(OH)_4$$

$$Na_2O + H_2O \longrightarrow 2NaOH$$

$$P_4O_{10} + 6H_2O \longrightarrow 4H_3PO_4 \qquad Mg + Cl_2 \longrightarrow MgCl_2$$

$$SO_3 + H_2O \longrightarrow H_2SO_4$$

$$2Na + 2H_2O \longrightarrow 2NaOH + H_2$$

$$12NaOH + P_4O_{10} \longrightarrow 4Na_3PO_4 + 6H_2O$$